

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) ~~A stack consisting of a filter press modular arrangement comprising a multiplicity of single proton exchange membrane fuel cells and of cooling devices, each cell being delimited by a pair of metal bipolar plates and comprising ion exchange membranes and perimetrical sealing gaskets shaped as frames suitable for housing current collectors within their hollow central part, the bipolar plates and the gaskets being provided with passage openings comprising holes for feeding the reactant gases, for extracting the residual gases with the reaction products, for injecting and discharging a thermostating fluid, the lateral migration of ions proceeding from said thermostating fluid inside said ion exchange membranes is prevented.~~

A stack, comprising:

a plurality of fuel cells;

a plurality of cooling devices;

a cooling fluid; and

a plurality of metal bipolar plates and gaskets having passage openings for feeding a reactant gas, for extracting a residual gas, and for injecting and discharging a cooling fluid,

wherein each fuel cell comprises an ion-exchange membrane with two sides, a current collector on each side of the membrane, and the gasket framing the perimeter of the current collector, and

each cooling device comprises an electrically conductive spacer and the cooling fluid flows through the cooling device, and

each fuel cell is delimited by a pair of bipolar plates, and

the cooling fluid is separated from the ion-exchange membrane.

2. (Previously presented) The stack of claim 1, wherein the bipolar plate closest to the negative terminal is free of passage openings.

3. (Cancelled)

4. (Currently amended) The stack of claim 1, wherein the construction material of the metal bipolar plates is stainless steel containing 16-26% chromium, 10-22% nickel, and optionally molybdenum.

5. (Currently amended) The stack of claim 4, wherein said stainless steel is selected ~~[[between]]~~ from AISI 316L ~~[[and]]~~ or the steels of the CrNi 2520 series according to DIN.

6. (Currently amended) The stack of claim 1, wherein the ~~[[thermostating]]~~ cooling fluid is demineralised water circulating in a ~~[[close]]~~ closed circuit.

7. (Currently amended) The stack of claim 1, wherein the perimeter of the ion-exchange membrane~~[[s]]~~ is located in an intermediate region between the boundary of

~~the center hollow portion in the gasket of the perimetrical sealing gaskets comprised between the edge of the central hollow portion and the circumference of the passage openings.~~

8. (Currently amended) The stack of claim 7, wherein the ion-exchange ~~[[membranes are]]~~ membrane is isolated from the ~~[[thermostating]]~~ cooling fluid by ~~[[means of]]~~ sealing elements selected from ridges or rings located in said intermediate region, ~~optionally comprising ridges or rings.~~

9. (Currently amended) The stack of claim 1, wherein the ion-exchange ~~[[membranes are]]~~ membrane is provided with passage holes ~~matching~~ aligned with the passage openings ~~[[of]]~~ in the gasket~~[[s]]~~ and ~~having a greater section~~ being larger in size than said openings; the ion-exchange membrane is further ~~[[which are]]~~ isolated from the ~~[[thermostating]]~~ cooling fluid by ~~[[means of]]~~ sealing elements selected from ridges or non-conductive material in the form of planar gaskets or O-rings located between the edges of said passage holes ~~[[of]]~~ in the membrane~~[[s]]~~ and the passage openings ~~[[of]]~~ in the gaskets ~~optionally comprising ridges or rings of non-conductive material in form of planar gaskets or O-rings.~~

10. (Currently amended) The stack of claim 9, wherein said ~~[[rings of]]~~ non conductive material ~~[[are made of]]~~ is a low hardness rubber selected from ~~[[rubbers, optionally]]~~ EPM or EPDM.

11. (Currently amended) The stack of claim 9, wherein said [[rings of]] non conductive material is applied in liquid form [[consist of a liquid film applied at the moment of]] when assembling the stack and [[polymerised]] polymerized with a catalyst contained in the liquid [[film]], or cured by UV irradiation or thermal treatment.

12. (Currently amended) The stack of claim 11, wherein said [[film]] non conductive material is provided with elasticity and reduced hardness after [[polymerisation]] polymerization or curing.

13. (Currently amended) The stack of claim 12 wherein said liquid [[film consists of]] is a silicon resin-based [[polymerisable]] polymerizable material.

14. (cancelled)